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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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David A. Biro

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EXAMINER

THOMPSON RUMMEL, PONDER N

ART UNIT

PAPER NUMBER

1795

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/591,336	Applicant(s) BIRO ET AL.	
	Examiner PONDER N. THOMPSON RUMMEL	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/26/2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohman et al (US 2003/0180507) in view Lovin (US 5,407,708).

With respect to claims 1 and 3 – 11, Ohman et al discloses a packaging laminate for a packaging carton and process of producing such packaging comprising:

- Applying a printing ink, such as an radiation-curable ink, solvent based ink or water based-ink, to the surface of the plastic coating packaging laminate (paragraph [0031] and abstract);
- Exposing the ink with UV light (paragraph [0031]);
- Applying a transparent layer of radiation-curable lacquer to the plastic coating (packaging laminate - paragraph [0032]); and
- Curing the radiation-curable lacquer with UV light or electron radiation (paragraphs [0033] and [0034])

Further, the packaging laminate is a plastic laminate comprising an aluminum foil material layer (paragraph [0030]). The packaging carton is filled with contents such as food (paragraph [0036]). However, Ohman fails to specifically disclose

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the separate exposure of the ink prior to being overcoated with a transparent layer.

Lovin et al discloses a method of printing of a substrate used in food packaging comprising:

- Applying a coating of radiation-curable ink to a substrate (column 5, lines 64-66) such as a heat shrinkable, flexible webs formed of thermoplastic material; (column 5, lines 54-60)
- Exposing the ink to UV radiation (column 5, line 66);
- Applying a second coating of ink to the substrate (column 6, lines 3-6); and
- Exposing or curing the ink using an electron beam radiation (column 6, lines 12-13).

Lovin discloses that the partial curing step prior to applying a second layer of ink helps to prevent pick off and smearing of the ink at the subsequent print stations (column 6, lines 2-5). Further, Lovin also teaches that the use electron beam irradiation upon final curing leads to a final product that can withstand harsh environmental treatment associated with food packaging and also prevent shrinkage of thermoplastic web (column 6, lines 47-55). Therefore, it would have been obvious to one of ordinary skill within the art to apply UV radiation to the ink as disclosed by Lovin prior to applying a protective coating as disclosed by Ohman to prevent smearing of the ink and to lower the amount of photoinitiators that migrate to food in packages (column 5, lines 9-20).

2. Claims 1, 4, 5, 7, 8, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lovin (US 5,407,708) in view of Edlein et al (US 6,528,127).

With respect to claims 1, 4, 5, 7, 8, and 11, Lovin et al discloses a method of printing of a substrate used in food packaging comprising:

- Applying a coating of radiation-curable ink to a substrate (column 5, lines 64-66) such as a heat shrinkable web;
- Exposing the ink to UV radiation (column 5, line 66);
- Applying a second coating of ink to the substrate (column 6, lines 3-6);
and
- Exposing or curing the ink using an electron beam radiation (column 6, lines 12-13)

However, Lovin et al fails to disclose the use of an energy-curable coating that is placed over the ink after the first UV irradiation step.

Edlein et al discloses a method of printing a thermoplastic film having a radiation-cured overcoat. The overcoat is applied over the entire printed surface of the film (column 10, lines 45-47). The film acts as an overcoat that provides protection to the printed image during further treatment, processes or uses (column 10, lines 47-49). Further, the film is transparent so that the printed image is visible (column 10, lines 50-510). By applying a coating over the ink, inks are protected through severe handling and processes. Additionally, the use of the overcoat prevent the need for the use of expensive and exotic inks as well as the tampering of handling and processing conditions (column 2, lines 32-37).

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Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the use of an radiation-cured overcoat as disclosed by Edlein et al within the method of Lovin et al. to protect the printed image as well as prevent the use of exotic inks and tampering of handling/processing conditions.

3. Claims 1, 2, 5, 6, 9, and 11 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Mossbrook et al (US 2005/0019533) in view of Lovin (US 5,407,708).

With respect to claims 1,2, 9 and 11-14, Mossbrook discloses a printed thermoplastic film with an overprint varnish as a packing material and production process comprising:

- Applying a printed image to a film using a radiation curable or solvent based ink (paragraphs [0061] and [0065]);
- Applying an overprint varnish to cover the printed image of the film (paragraph [0068]);
- And then curing the overprint varnish with radiation energy such as UV light or electron beam radiation (paragraph [0069] and [0088]).

Mossbrook et al also discloses that the printed film for packaging contains a thermoplastic material in which a product such as food may be introduced into the package and sealed (paragraph [0104]). Additionally, the package will contain less than 50 ppb of migratable solvent (paragraphs [0007] and [0008]).

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However, Mossbrook fail to disclose the curing of the ink after being applied to the thermoplastic film.

Lovin discloses a method of applying radiation-curable inks to a packaging material wherein the applied ink is exposed to UV radiation after application to a substrate (column 5, lines 65-67). The ink is partially cured with UV light to prevent pick off and smearing of the ink (column 6, lines 2 and 3). Therefore, it would be obvious to one of ordinary skill within the art at the time of the invention to include a curing step with UV light as disclosed by Lovin et al within the production of the packing material disclosed by Mossbrook et al to prevent smearing and pick off of the printed ink applied to the thermoplastic film.

4. Claims 1, 11, 15, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mossbrook et al (US 2005/0019533) in view of Lovin (US 5,407,708) and in further view of Chatterjee et al (US 6,803,112).

Mossbrook et al in view of Lovin discloses a printed thermoplastic film with an overprint varnish as a packing material and production process as applied to claims 1 and 11 above. Mossbrook also discloses a solvent resistance rub test (paragraph [0092]), however, fails to disclose a solvent rub test using methyl ethyl ketone (MEK).

Chatterjee et al discloses a radiation curable aqueous composition for film packaging wherein a solvent rub test is performed. The solvent test is performed on a flat surface using a solvent such as methyl ethyl ketone (MEK) and the

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cured film (column 7, lines 64-67). The cured film surface is rubbed repeatedly with an applicator containing the solvent with a back and forth motion. The film surface is rubbed a certain number of times to measure the resistance of the cured film. The film is considered solvent resistant when rubbed 10 or more times, or more preferably, 20 to 75 times before deterioration of the film is observed (column 8, lines 1-10). Therefore, it would have been obvious to one of ordinary skill within the art at the time of the invention to perform a solvent rub test using MEK as described by Chatterjee et al within the process and on the film of Mossbrook et al to measure the resistance of the film to a solvent.

Response to Arguments

5. Applicant's arguments, see Remarks, filed June 26, 2006, with respect to the rejection(s) of claim(s) 1,3, 4, 6, 7, and 9-11 under 35 USC 102 (b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made over Ohman et al (US 2003/0180507) in view Lovin (US 5,407,708). Ohman discloses the packaging laminate process as claimed by applicant, however, fails to disclose an irradiation step upon application of the radiation-curable ink before applying a transparent layer. Lovin discloses irradiation or partial curing of such inks after being applied to a surface to prevent the inks from smearing and to prevent inks from migrating to packaged goods such as food.

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6. Applicant's arguments filed under 35 USC 103 (a) over Lovin in view of Edlein et al (US 6,528,127) have been fully considered but they are not persuasive. Lovin discloses the uses of a radiation curable ink that has curable functionality. Eldein does teach the use of a transparent, radiation cured overcoat that can be applied to the surface of a thermoplastic film that provides protection to a printed image during further treatments and uses. Thus, the inks are protected through sever handling and process. Therefore, there is motivation to combine the two references to distinctly point out the purpose of a transparent, radiation cured overcoat.

7. Applicant's arguments filed under 35 USC 103 (a) over Mossbrook (US 2005/0019533) in view of Lovin have been fully considered but they are not persuasive. Applicant argues that it would not be obvious to subject a solvent base ink as disclosed by Mossbrook into an energy curing system as disclosed by Lovin. However, Mossbrook discloses a method to apply a printed image using a radiation curable **or** solvent base ink and further providing an overprint varnish method radiation. Lovin teaches that when the ink is exposed to radiation prior to providing the overprint varnish, exposure prevents smearing of the ink (column 6, lines 2 and 3). Lovin also teaches that the use electron beam irradiation upon final curing leads to a final product that can withstand harsh environmental treatment associated with food packaging and also prevent shrinkage of thermoplastic web (column 6, lines 47-55). Therefore, it would have been obvious to one of ordinary skill within the art to apply UV radiation to the ink as disclosed by Lovin to prevent shrinkage of the web and to lower the amount of photoinitiators that migrate to food in packages (column 5, lines 9-20). Since one could

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use a solvent base ink within the composition, one could further assume that curing of a solvent base ink can take place using UV radiation or EB radiation.

8. With regards to applicant's argument regarding claims 1, 11, 15, 16 and 17 as being rejected under 35 USC 103(a) over Mossbrook in view of Lovin and Chatterjee, the rejection remains for the reasons stated above regarding the rejection over Mossbrook in view of Lovin. Chatterjee dose disclose a rub test using MEK as a solvent to measure the overall resistance of a cured film.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PONDER N. THOMPSON RUMMEL whose telephone number is (571)272-9816. The examiner can normally be reached on Monday-Friday 7:00 am - 4:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. N. T./
Examiner, Art Unit 1795

**/Cynthia H Kelly/
Supervisory Patent Examiner, Art Unit 1795**